

US EPA ARCHIVE DOCUMENT

# Opportunities to Site Community-scale Forest Bioenergy Projects in the Sierra

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# Key Points

- The multiple environmental, economic and societal benefits of biomass energy and an avoided cost approach to accounting for these
- The current state of forestry and why community-scaled biomass energy facilities are important to protecting the State headwaters and forests
- The state of biomass energy facility development

# Water and Fire

## California's Sierra Nevada - Your Source of Water

California's instate water supply mainly comes from the Sierra Nevada and southern Cascade mountains. The map shows the range of water yield throughout the state, water that is potentially available for use. The highest amount of water yield is depicted in dark and lighter blue and the more arid areas are shades of beige.

The naturally wet areas of California support and sustain the dry areas. The map shows the primary end users of the water by use of the faucet icon.

### Water Sources & Destinations

#### Description

-  Sierra Nevada
-  North Coast
-  Sierra Nevada Conservancy Boundary
-  Agriculture
-  Urban Areas

#### California Water Yield

##### Acre Feet per Year

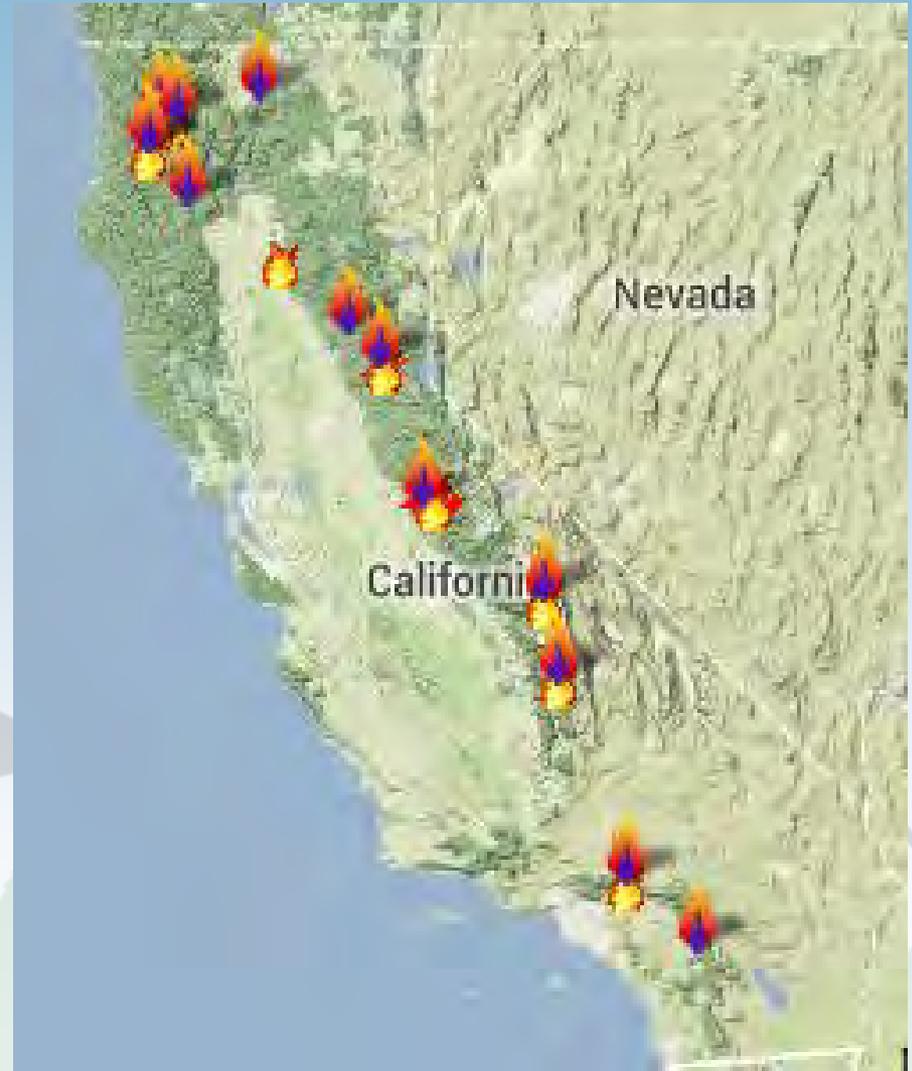
-  13 - 33
-  9 - 12
-  6 - 8
-  3 - 5
-  0 - 2

Water yield is the volume of water that does not evaporate or evaporate from the system, and therefore, is potentially available for use as either surface or groundwater. Water yield can take the form of storm water runoff, baseflow, or deep groundwater.

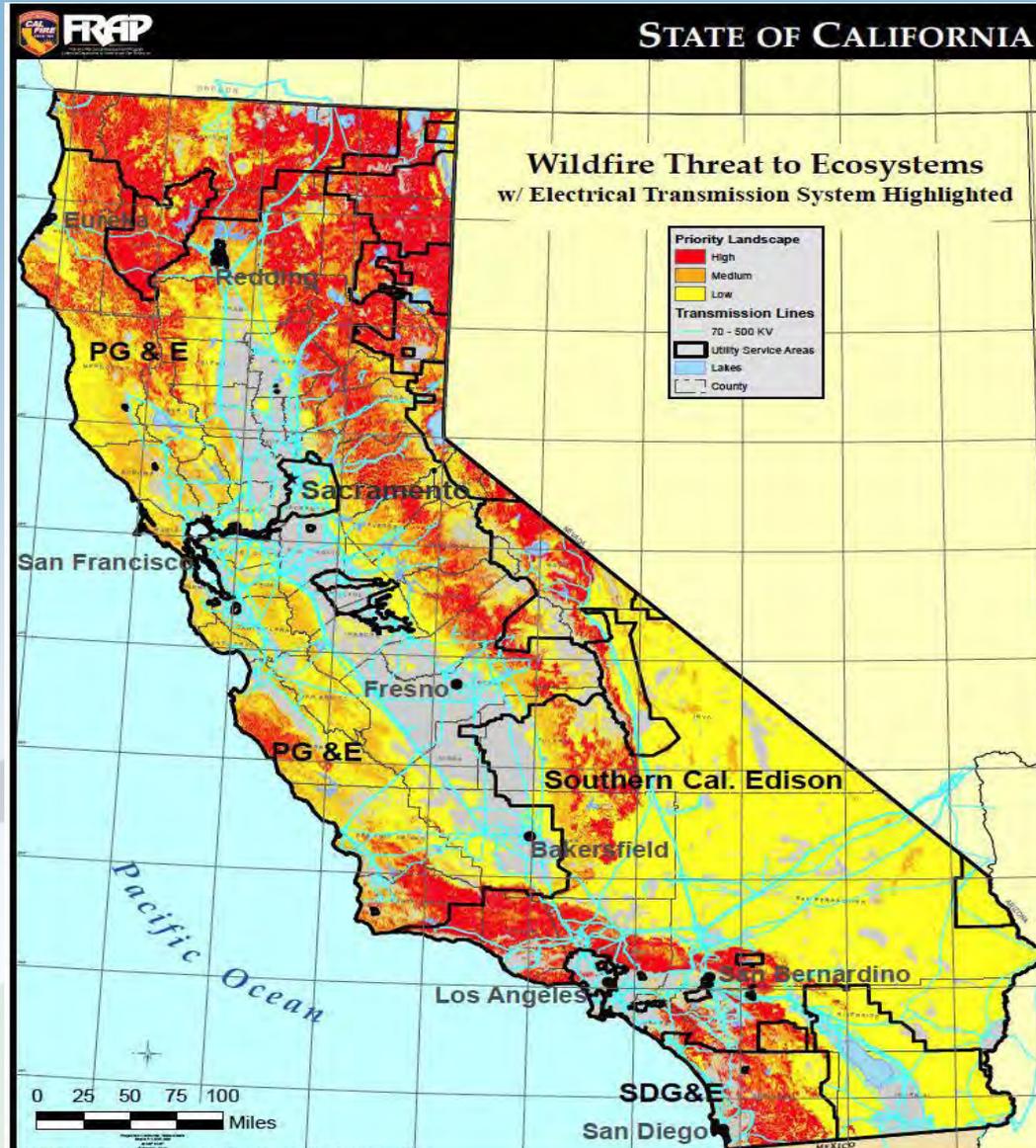


**Data Sources:**  
 California Water Yield: The Nature Conservancy  
 Water Sources & Destinations: California  
 Water Yield 2010 and 2011 Census  
 Urban Areas: ESRI Data and Maps

Prepared by: Sierra Nevada Conservancy



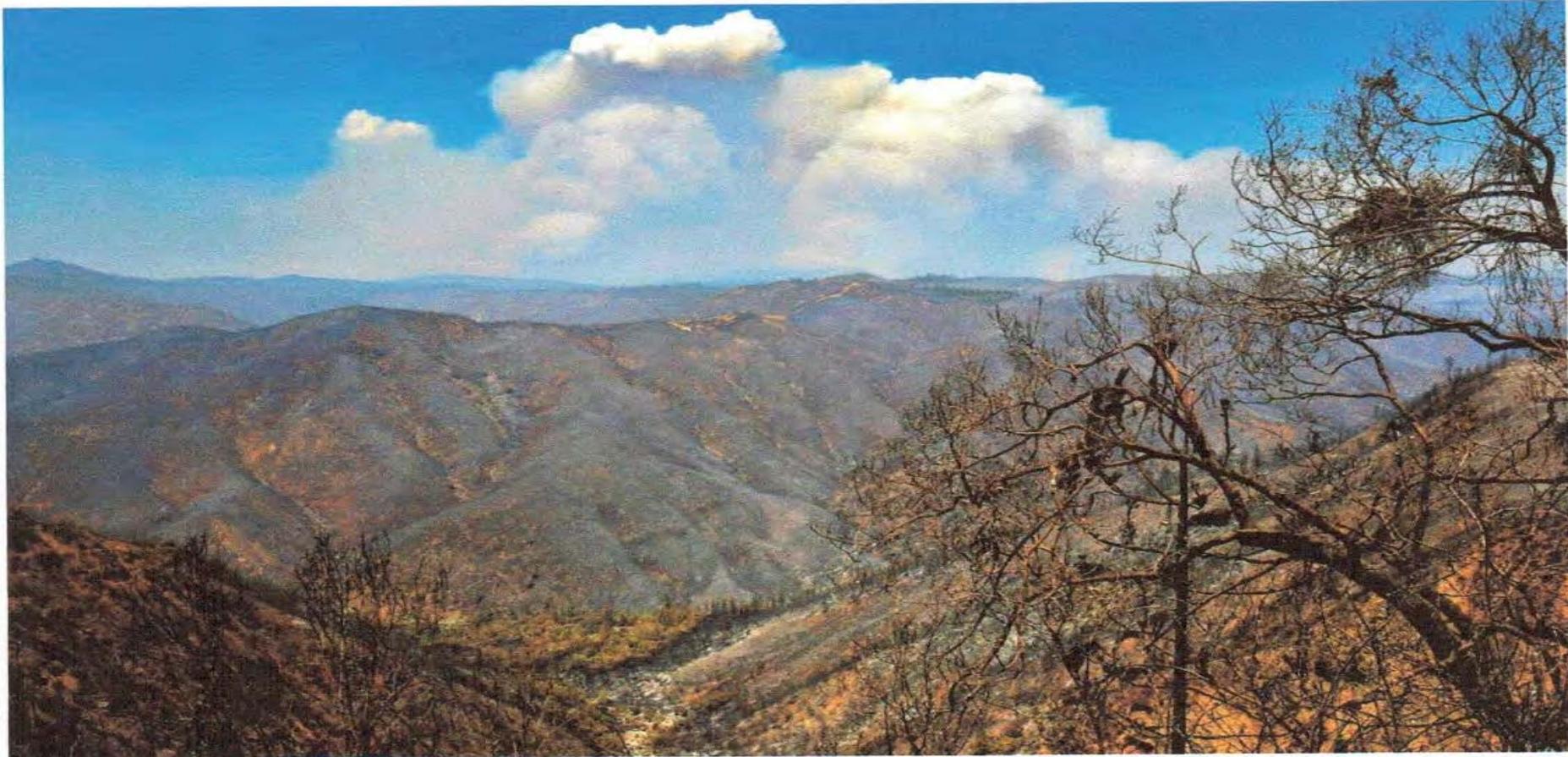
# Wildfire Threat & Transmission System



# Welcome to Groveland, CA



# Rim Fire





Pacific Gas & Electric near the enclave of Buck Meadows west of Yosemite National Park

Don Bartletti Los Angeles Times  
[www.SIERRANEVADA.CA.GOV](http://www.SIERRANEVADA.CA.GOV)

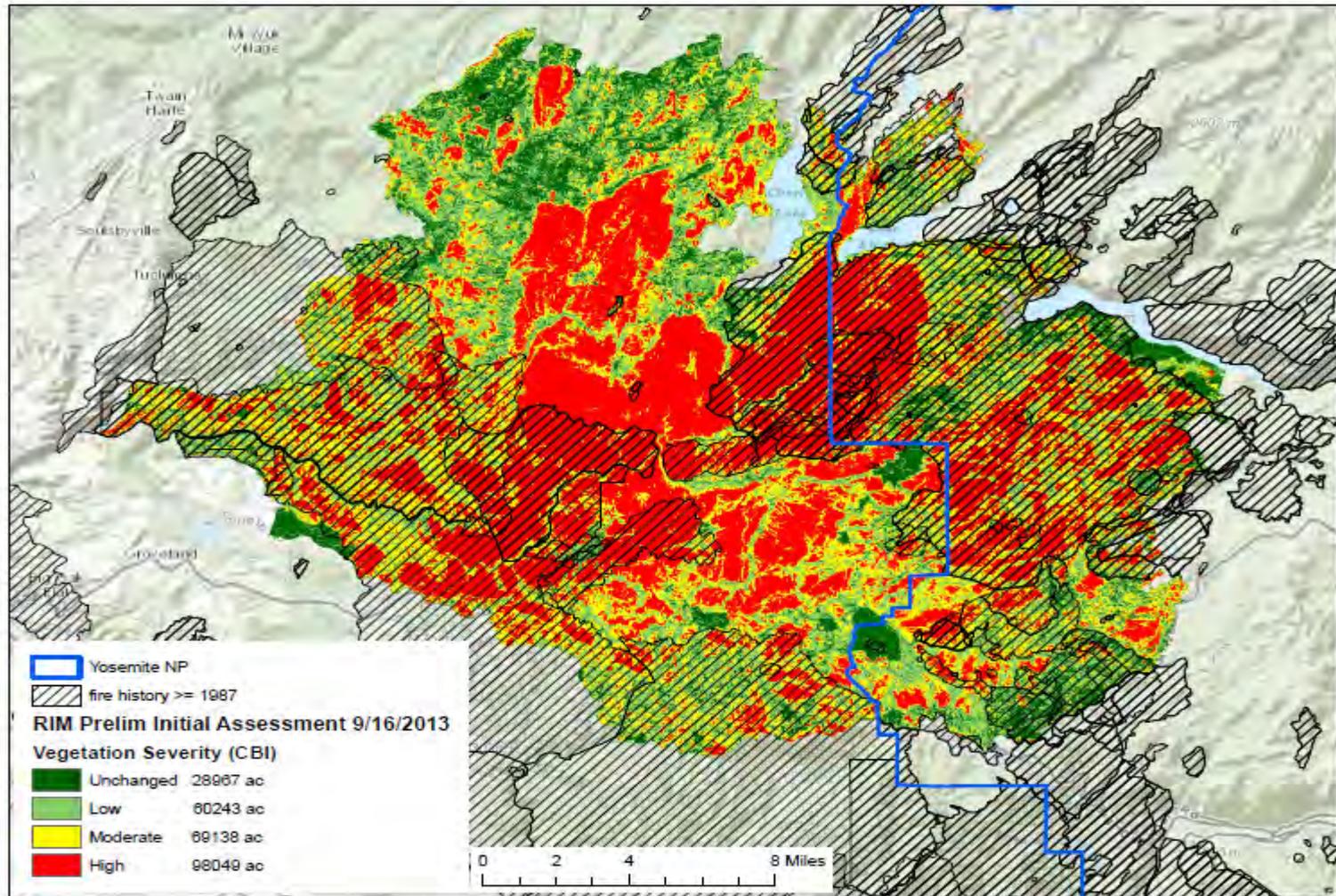




# Assets at Risk

- Water Quality
- Water Supply and Reliability
- Carbon Storage
- Air Quality/GHG emissions
- Habitat
- Recreation
- Timber
- Utilities Infrastructure
- Structures, homes, etc.

# Rim Fire Severity



# Avoided Costs:

Estimated Rim Fire Costs \$146m

Costs to treat 20%  
of watershed \$25.5m  
(\$500/ac)

(20% of 255,000 acres)



## Existing and Proposed Forest Bioenergy Facilities within SNC Region

### Legend

#### Forest Bioenergy Facilities within SNC Region

MW	Status
○ 1-8	● Proposed Forest Bioenergy Facilities
○ 9-16	● Non-Operational
○ 16-24	● Operational
○ 24-32	● Operational

Data Source: UC Berkeley Forestry Extension  
Date: March 2013

Name	PlantType	MW	CogenStatus	MapStatus
Big Valley Pw r	Biomass pow er plant	7.5	not cogen	Non-Operational
Burney Mtn Pw r	Biomass pow er plant	11	cogen	Non-Operational
Burney Forest Products	Biomass pow er plant	31	Cogen	Operational
SP- Burney	Biomass pow er plant	20	cogen	Operational
SP- Susanville	Biomass pow er plant	12.5	not cogen	Non-Operational
HL Pow er Co.	Biomass pow er plant	32	not cogen	Operational
Collins Pme Co. Project	Biomass pow er plant	12	cogen	Operational
M. Lassen Pw r	Biomass pow er plant	11.5	not cogen	Non-Operational
SP- Quincy	Biomass pow er plant	25	cogen	Operational
SP- Loyallon	Biomass pow er plant	20	not cogen	Non-Operational
Buena Vista Biomass Pw r	Co-fire or conversion	18.5	not cogen	Operational
SP- Sonora	Biomass pow er plant	8	cogen	Operational
Pacific Ultrapow er Chinese Sta.	Biomass pow er plant	22	not cogen	Operational
Sierra Biomass (Auberry)	Biomass pow er plant	7.5	not cogen	Non-Operational
Sierra Forest Products	Biomass pow er plant	9.5	cogen	Operational

Esri, DeLorme, NAVTEQ, UNEP-WC  
SEBCO, NOAA, IPC



# Current Biomass Management



# Diverse Biomass Uses



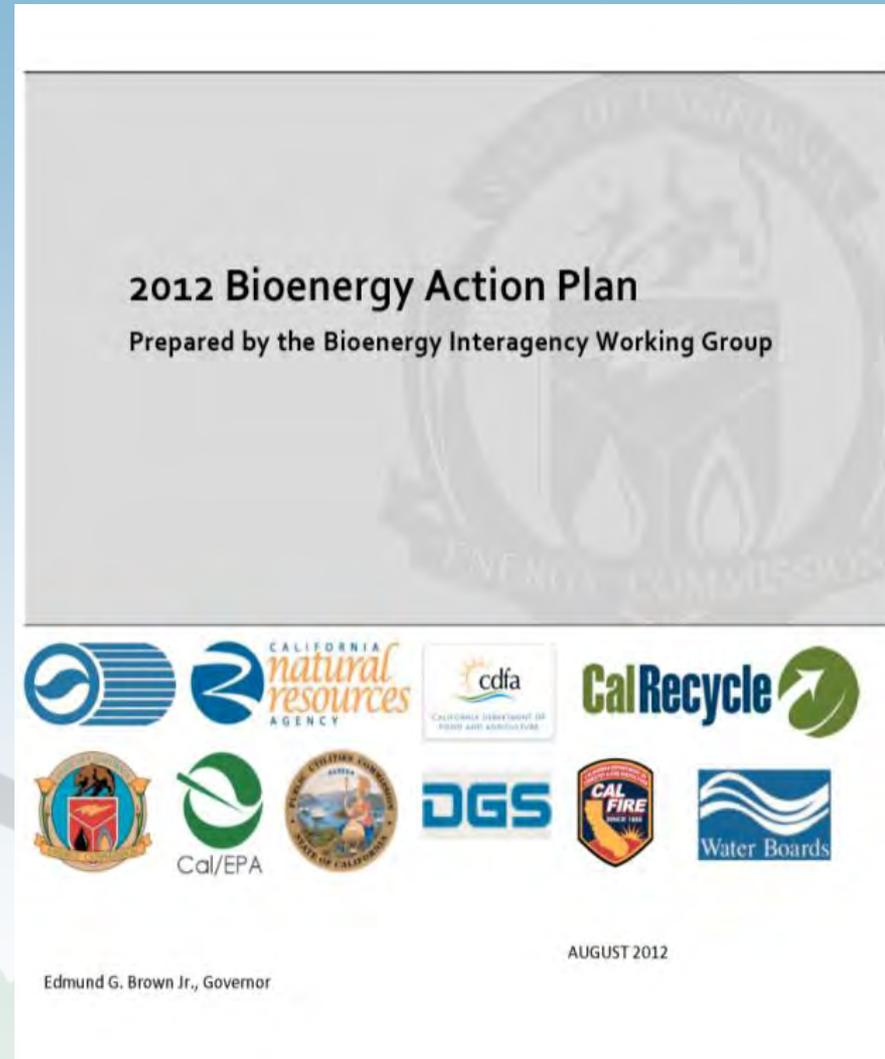
# Credits

- Biomass products (post and poles, landscaping materials)
- Energy (and heat)
- By-products from energy (biochar)
- Carbon credit off-sets

# California Bioenergy Action Plan

## Develop woody biomass bioenergy demonstration projects by:

- Updating research
- Refining criteria for 'community-scale' projects
- Identifying candidate projects
- Developing screening criteria
- Seeking funding
- Coordinating the Biomass Working Group



# Biomass Working Group

## State

- California Energy Commission
- California Public Utility Commission
- Natural Resources Agency
- Department of Forestry and Fire Protection
- Sierra Nevada Conservancy
- UC Berkeley

## Federal

- US Forest Service

## Local

- Placer County

## Non-Governmental

- Sierra Institute
- The Nature Conservancy
- Sierra Forest Legacy
- Northern Sierra Partnership
- Hayfork Watershed Center
- Pacific Forest Trust
- National Forest Foundation
- Sierra Business Council
- Biomass Thermal Energy Council

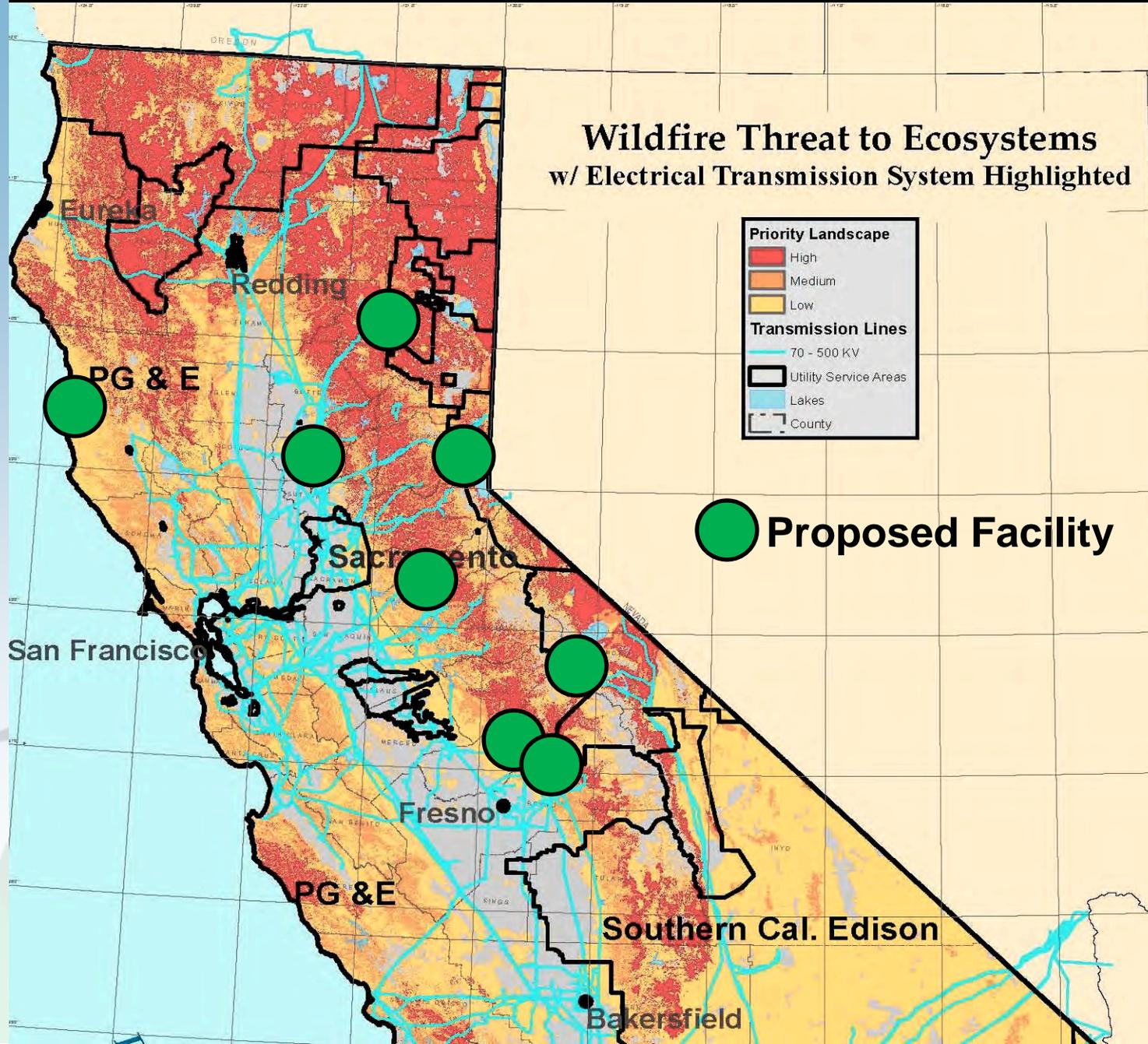
## Technical Expertise/Industry

- TSS Consultants
- Miramar Environmental (PG&E representative)
- The Collins Company
- California Forestry Association

# Need to engage Local, State, Federal and Private Partners in this investment



## Wildfire Threat to Ecosystems w/ Electrical Transmission System Highlighted



# Active/Potential Projects

SPONSOR	LOCATION	SCALE
Placer County	Truckee, California	2 MW
North Fork, Community Development Council	North Fork, California	1 MW
Calaveras Healthy Impact Products Solutions, Inc.	Wilseyville, California	2 MW
Indian Valley Community Service District	Greenville, California	3 MW
CDF Parlin Fork Conservation Camp	Fort Bragg, California	1 MW
Yuba County Watershed Protection & Fire Safe Council	Marysville, California	3 MW
Unity Forest Products	Yuba City, California	1 MW
Dinkey Collaborative/Southern California Edison	Shaver Lake, California	1 MW
	<b>TOTAL</b>	14 MW

# Project location screening



How close is the project to an electric distribution grid?



How much sustainably-harvested feedstock is available?



What utility services the site?

# SB 1122 Impact on Biomass

- Creation of markets for woody biomass from hazardous fuels reduction
  - 50 Mw of distributed energy will utilize approximately 400,000 (BDT) of forest biomass
  - Support treatment of approximately 30,750 acres per year



# Waste Diversion

**Open pile burning**



**Closed burning**

